

LEAD-MINING AT WOODHEAD, CARSPHAIRN

By J. SASSOON

From 1840 to 1873 at Woodhead in the parish of Carsphairn, Colonel M. Cathcart fostered a remarkable development, but, characteristic of so many similar enterprises, its benefit was to be ephemeral. The decline in population was temporarily halted, for a time there was employment for all and a degree of prosperity ensured. The lead mines at Woodhead had the most up-to-date equipment and a "model" village community flourished- an example of the combination of enterprise and philanthropy on the part of the proprietor, but, some thirty years after its establishment the village had lost its *raison d' être* as the clamour and smoke declined with diminishing production. The moor was returned to the wild although, even yet, there is evidence of the workings and of the village. The stout shells of the miners' rows and of the two-storey schoolhouse bear poignant witness to the aspirations of an earlier generation. An industrial community had been planned so improbably in a remote moorland setting. It flourished and withered.

What was it that had encouraged Colonel Cathcart to make such profound changes, and what were those changes? He could not have been induced by high lead prices, for they stood at their lowest for a hundred years. He may have been influenced by two factors. The first of these is what Dr Smout describes in the context of mining in a previous age, as "the eighteenth century instinct for gambling and amateur science" which may still have found expression in the Colonel. The second of these factors may well have been philanthropy, for the proprietor would have some responsibility for the poor on his estate, and may have found himself with the means to fulfil his duty on an impressive scale (The mine at Tyndrum was started expressly to provide employment in the relief of crofting distress on the Marquis of Breadalbane's estate). Hoping that prices could now only rise, he may have anticipated that along with the satisfaction of duty done and hobby pursued, there might even be that of a return on investment.

It is clearly evident that, for whatever reasons, the Colonel was thoroughly interested, for "efforts were under his own command." It was more customary for landowners to lease out the mine-working to companies at a "tack" of one bar in six, but less if production declined below a stated level, and with reservations as to the proper maintenance of the workings.

The most modern equipment was installed. A thirty-foot wheel was to drive the crusher, power being water, skilfully led from the neighbouring mountains. Smelting furnaces were "on the most approved plan," and preparations were made for separating the silver. It was hoped to take advantage of the abundant coal and lime to be obtained on the Ayrshire side (The Cathcart family's Ayrshire background would, no doubt, facilitate dealings with the coal and lime masters).

A large village, whose population became about three hundred, was built with a school and school-house, the schoolmaster and female teacher being rewarded "with a liberal salary." Colonel Cathcart provided the foundations of a library.

All this capital investment and infra-structure was laid down on this up-to-date and lavish scale before even an ounce of lead had been smelted. Perhaps Mr Welsh was right when he wrote: "It seems that the proprietor sought perfection rather than enrichment...." At all events "a wonderful change was wrought....in the bosom of a remote mountain" which had now become a scene of industry and activity "to be witnessed to be understood and which cannot be contemplated without astonishment."

During the period of this mine's activity, about two hundred tons of haematite were brought to the surface nearby, but this was never even taken to the smelter (probably the Dalmellington Iron Company) and lies there to this day. Small deposits of many ores had been found in the region (gold had been panned a mile away) but never in sufficient quantities to justify serious investment. This, then, was the background against which the Colonel was proceeding with the development at Woodhead.

The lead was smelted down, using coal from Dalmellington some eight miles away. The carts brought coal up to Woodhead and took away the bar metal which had been re-smelted, if not continuously then from time to time, in order to extract the silver. From this silver the Cathcart family had a service made. The Colonel's wife, who presented Dalmellington with its church, provided the silver from which some of its communion cups were made.

Scottish ores are reported to have averaged seven or eight ounces per ton of lead, according to the Reverend J. Moir Porteous in his intriguingly titled "God's Treasure House in Scotland," published in 1876.

This gave Woodhead two advantages. Coal was great improvement over peat, and elsewhere the cost of the more efficient fuel was usually found to be prohibitive. The silver, if its extraction was truly an economic proposition, could be looked on as a bonus, although its removal was necessary to maintain the purity and softness of the lead.

From Wanlockhead and Leadhills, at altitudes of about 1300 feet, as against 800 feet at Woodhead, the road was long and rough both to Edinburgh (about 54 miles) and Dumfries (about 45 miles), but it was only eight miles to Dalmellington from Woodhead, using the new access road and the coaching road. Here lead was stored in the "leid-yaird" and was despatched as the market demanded. Because, generally, roads were poor, it was important to get the lead to a port as early as possible on its way to the consumer. It was only fifteen miles to Ayr, whence coasters were able to take the lead to market, either in Liverpool or London where, on account of its superior quality, it is reported to have commanded higher prices than metals from rival mines.

Lead was much used in pipes and roofs in building, and in the pottery industry. It had been exported to Amsterdam as "potters' ore."

Alongside the advantages of easy access to fuel and market must stand the technical advantages associated with modern plant. Two flues were erected on the hill-side with ducts leading up from the furnaces. From these additional lead was obtained, as it "condensed out of the smoke."

Fig. 1 – Woodhead Lead Mine. Taken from an original drawing, this sketch shows the northern two-thirds or so of the workings.

The village at Woodhead, being new, probably provided more comfort than other mining villages. The cottage roofs were of slate and the walls sturdy and weather-tight.

As was the case at other villages, the proprietors permitted the miners to make gardens. This was very important, for the vegetables acted as an antidote to the scurvy which had been rife in these communities. It is reported that in 1742-3, miners purchased five times as many anti-scorbutics as the other customers of the chemist in Sanquhar, as well as twice as many purgatives to ward off the horrors of lead poisoning. No doubt the diet, basically of meal, would be augmented by the occasional trout from the burn, with or without the proprietor's permission.

The introduction of ducts and flues to take fumes away from the mine plant was a great contribution towards the reduction of the incidence of lead poisoning, and Woodhead was fortunate from having this refinement right from the start, bearing in mind the earlier remark that lead was obtained from the gases which were drawn off in this manner. But for this, the miners would have found the noxious gases of the smelting process permeating the workings and even poisoning the water supply, just as they may have experienced in the communities from which they had come.

The short working day (six to eight hours) was due to the uncongenial conditions of work. To pass their spare time the miners read a great deal, and following the precedent of Leadhills, a library was established, containing donations from the proprietor's own shelves. However, reading was not the only pastime these communities. In 1784 the minister in one mining community wrote, ".....During the few months I have been here I have baptised more bastard children than for sixteen years before." A century later, a successor was noting "No less than SEVEN HUNDRED AND TWENTY POUNDS sterling was spent on tobacco in the village of Wanlockhead and Leadhills in the year 1875, whilst in the three churches not much above THIRTY POUNDS were contributed to promote the evangelisation of the world." Such profligacy by what was probably a minority, however active, was only in retaliation against the harshness of surroundings and the rigour of work.

From this, it seems it would not be difficult to distinguish between the shepherds and farm workers on the one hand, working long hours for poor wages, the rigours of their occupation having weeded out the weak and, on the other hand, the pallid miners, working much shorter hours for more wages, but showing the signs of the rigours of their occupation.

Paternalism was the system governing the mining workers' conditions of life and employment, and, in spite of all that has been said, many must have felt gratitude just for being in work, of whatever kind. The other side of the coin was in the conditions of work, in debt to the proprietor for tools and provisions and in fear of summary punishment for misdemeanours such as drunkenness.

How was the actual work of the mine organised?

At the surface were the smelters, the smallest group and suffering the greatest health hazard through the furnace gases, backed up by the crushing operation. This was often done, in early days, by boys of nine years' age, in the open or under rude shelters with simple hammers; but at Woodhead, the great thirty-foot wheel drove the crusher. Blacksmiths kept the tools and bogies and their railway in operation.

Below ground, groups of workers contracted with the management to extract the ore, with pick and shovel, on the basis of tonnage of bar lead smelted out (no lead- no pay) or to dig adits at a rate per fathom. Prices ranged between £2 15s and £6 per ton of lead raised, and £6 and £7 10s per fathom of working. Such bargains only ran for a month or two at a time during the Manager's pleasure "because there is always the chance of a vein growing richer and in that event the workmen would have extravagant wages" considered the manager at Wanlockhead in the 1760's.

Before 1860 (at Dalree) about half the cost of smelting was in wages, the other half being fuel (peat at 2d a load, coal at 20d a load) and lime, the whole of this running to about one pound per ton. To this had to be added the mining costs, plus drainage, exploration, transport (at about 10% of the market price at Leith of Leadhills lead, down the toll-free road via Biggar in the 1740s), management and "tack" paid by the exploiter to the proprietor. Of course, at Woodhead, there was no tack as exploitation was in the laird's hands.

Fig. 2 – Some production figures for three lead mines, 1840-1873; from records of the School of Mines and Geological Survey.

Fig. 3 – Some lead prices for Scotland, 1720-1880; from Geological Survey Special Report and T. C. Smout.

The risk, to the entrepreneur's capital and to the life and limb of the humble worker was high. Sir John Erskine of Alva used to tell visitors, "Out of that hole I took fifty thousand pounds- and I put it into that hole!" At one time about one third of the useful surface water at Wanlockhead was disappearing down a new level at adjacent Leadhills. This sort of thing led to great and unexpected expenses- and in litigation.

Thus in 1839, perhaps on a whim, perhaps on a high sense of duty, perhaps on a simple desire for gain, Colonel Cathcart brought about an exciting change on his estate. Two centuries previously the land had been in process of having its natural timber cover removed. Then sheep and black cattle for which Galloway was noted took over. Now, for some thirty years there was to be industry, with the clank of machinery, the ring of the hammer, and also with noxious fumes. With the closure of the mine (some reasons for which are suggested in the notes on the graphs) shooting seems to have become the proprietor's interest. By 1909 the Ordnance Sheet was indicating that some of the cottages had become kennels, and the most substantial house, possibly the manager's or the school-house, had become a shooting lodge. The shafts were fenced off and used as rubbish tips. Livestock once again roamed the site, sheltering in the broken-down buildings or under the few trees that had been planted to soften the line of the bare hillside. The daffodils that had been planted persist today.

The great wheel remained until the 1920's and in the second war all the houses, except the lowest-lying row, were being cannibalised for the slates and timber, or even vandalised, for proper supervision of the estate was impossible in war-time. The surviving house is used for holidays and the others in its row have been converted into an implements shed.

The land reverts and Woodhead sees only the shepherd, and the occasional hill-walker and lorries which come from time to time to remove the spoil for road-metal.

There is practically no documentary evidence of what social and economic life was like at Woodhead, or of the motivation for, and the economics of the actual mining enterprise. For instance- how many workers were there at any time? Harper wrote that there was a village of some 300 souls, but how many were able bodied men, or how many were children? What was the "liberal salary" of the school-master and his assistant? It is said that the community worshipped at Carsphairn and the now-ruined Free Church at Lamloch nearby. From whence did the people come, and indeed where did they go? It seems that many came from the other Southern Uplands Mines. The blacksmith at Carsphairn in 1898 was a Cornishman- probably a former mine employee.

For Wanlockhead and Leadhills there are the detailed diaries of the managers as well as letters and reports by others, often the minister, or even a worker, but for Woodhead these do not now exist. There is no one

who can himself recall the mine in its heyday, only descendants who may remember what anecdotes grandparents recounted.

Thus it is necessary to piece together the picture of the lead-mine at Woodhead by using the evidence of others' eyes and the details of other enterprises. At best it must be shadowy, patchy, drawn by inference rather than direct evidence. Despite this, on visiting what is left of Woodhead, it is possible to imagine the scene of "industry and activity" so enthusiastically described by Mr Welsh, who would have been sorely disappointed to see, in 1873, after only thirty-five years, the last of that year's paltry twelve tons of lead leave on the cart for the "leid-yard" at Dalmellington.

What now, of the future of Woodhead? As trends run today, the village may disappear under afforestation, or, to some improvement of the land, perhaps the sheep may give way to the black cattle as beef ousts lamb in the housewife's favour.

It is most unlikely that lead should be once again extracted from that "bosom of the mountain."

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T. C. Smout, M. A., Ph. D., Department of Economic History, University of Edinburgh.

A. E. Truckell, M.A., Dumfries Burgh Museum

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NOTES ON FIGURES 2 AND 3

The Geological Survey prices are given for 10-year averages, while Dr Smout's are those noted in his papers "The Lead Mines at Wanlockhead" and "Lead-Mining in Scotland, 1650-1850." Although there are discrepancies, the trends are similar.

Rises in the prices of lead are attributable to the American and Napoleonic Wars. The post-Napoleonic drop was brought about by the withdrawal of import restrictions and the consequent entry of cheap Spanish lead into the market. The building boom of the '30s may have prevented from prices slumping even further.

Comparing the production graphs in the three mines, it is to be noted that the only one with a generally rising tonnage is Wanlockhead, and this, in fact, after some three hundred years of recorded extraction.

Both Woodhead and Black Craig reached their peak in under five years from beginning extraction, and immediately thereafter tonnages fell sharply, never to recover seriously.

Wanlockhead tonnages made some response to the rising prices after 1850, Woodhead made a small, temporary recovery and Black Craig was, at the time, in the throes of its opening spurt.